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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/826,440	04/04/2001	Cormac E. Herley	MS1-719US	6526
22801	7590	03/09/2004	EXAMINER	
LEE & HAYES PLLC 421 W RIVERSIDE AVENUE SUITE 500 SPOKANE, WA 99201			JOHNSON, TIMOTHY M	
			ART UNIT	PAPER NUMBER
			2625	
			DATE MAILED: 03/09/2004	5

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/826,440

Applicant(s)

HERLEY, CORMAC E.

Examiner

Timothy M Johnson

Art Unit

2625

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on _____.
- 2a) This action is **FINAL**. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-44 is/are pending in the application.
 - 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-23 and 26-44 is/are rejected.
- 7) Claim(s) 24 and 25 is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: _____.

Disclosure

1. The disclosure is objected to because of the following informalities:

On page 6, points 206, 208, 210, and 212 are incorrectly referred to as "peaks".

Together the points may be called a peak, but individually they are points.

Appropriate correction is required.

Claim Objections

2. Claims 15 and 44 are objected to because of the following informalities:

Claim 15 lacks a period at the end of the claim.

Claim 44 recites "one' or".

Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 10, 12-17, 25, 27-44 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

For claim 10, line 2, "the set of boundaries" lacks antecedent basis.

For claim 12, last two lines, "the set of boundaries" lacks antecedent basis.

For claim 15, lines 7-8, "the set of boundaries" lacks antecedent basis.

For claim 25, lines 2-3, "the transitions" lacks antecedent basis, because it is not clear if "the transitions" refer to the "set of transitions" recited in claim 19 or the "horizontal transitions" of claim 25.

For claim 25, lines 4-5, "the transitions" lacks antecedent basis, because it is not clear if "the transitions" refer to the "set of transitions" recited in claim 19 or the "vertical transitions" of claim 25.

For claim 27, last line, "the one or more objects" lacks antecedent basis.

For claim 33, line 10, "the first histogram" lacks antecedent basis.

For claim 33, lines 10-11, "the second histogram" lacks antecedent basis.

For claim 34, last two lines, "the one or more objects" lacks antecedent basis.

For claim 39, line 3, "the array elements" lacks antecedent basis.

For claim 41, line 3, "the array elements" lacks antecedent basis.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1-10, 12, 14, 18, 27-28, 34-37, 39-40, and 44 are rejected under 35 U.S.C. § 102(e) as being anticipated by Ishikawa et al., 6,157,737.

For claim 27, a device for detecting multiple objects in image data, the device comprising: a processor configured to execute computer program instructions for is generally provided by at least the digital image processor of Ishikawa in at least the first and last full paragraphs in c. 3, and detecting multiple objects is provided in at least the abstract, c. 1, lines 10-17, 47-67. Generating an edge map from the image data is provided by Ishikawa in at least c. 3, lines 30-42, where the Laplacian filter extracts and outlines edges, since it emulates the second derivative, and boundary points are explicitly extracted as noted in the first full paragraph in c. 4 and c. 6, lines 12-27, thus, providing for an "edge map", where Ishikawa also make explicit reference to a "map", and boundary is synonymous with edge. Analyzing the edge map to determine a set of boundaries of the one or more objects is also provided by Ishikawa in at least the second full paragraph in c. 4 by region border lines based on the boundary points of Ishikawa. Segmenting the one or more objects based on the set of boundaries is provided by Ishikawa in at least c. 4, lines 11-54, and c. 6, line 28 – c. 7, line 6.

For claim 28, see the rejection of at least claim 27, where the Hough transform is provided by Ishikawa to analyze the edge map of boundary points to determine boundaries.

For claim 34, see the rejection of at least claim 27.

For claim 35, see the rejection of at least claim 27, where photographs are explicitly provided by Ishikawa.

For claim 36, see the rejection of at least claim 27, where rectangular objects is explicitly provided by Ishikawa.

For claim 37, see the rejection of at least claim 27.

For claim 44, see the rejection of at least claim 27, where a computer comprising one or more computer-readable media as recited in claim 34 is provided by Ishikawa where cited above, where Ishikawa provides for a computer microprocessor/CPU and memory, where the microprocessor/CPU also includes necessary memory in order to function.

For claim 1, see the rejection of at least claim 27. A set of rules to identify objects is provided by Ishikawa where cited above for claim 27, where specific "rules" are used in the determination of objects after analyzing the edge map to determine boundaries.

For claim 2, see the rejection of at least claim 28.

For claim 3, see the rejection of at least claim 27, where it is clear that objects are aligned with respect to each other.

For claim 4, see the rejection of at least claim 36.

For claim 5, see the rejection of at least claim 35.

For claim 6, see the rejection of at least claim 44.

For claim 7, see the rejection of at least claim 27.

For claim 18, see the rejection of at least claim 44.

For claim 8, see the rejection of at least claim 35.

For claim 9, see the rejection of at least claim 36.

For claim 10, see the rejection of at least claim 27.

For claim 12, see the rejection of at least claim 27. A method as recited in claim 7: wherein the edge map comprises an array of elements, each element representing a respective pixel of the image data is provided by Ishikawa where cited above, where the edge map is a map of the images pixels by reciting that the boundary edge points are “picture elements” (i.e. “pixels”) “disposed along an apparent border line”. Wherein the analyzing further comprises: transforming the array of elements to produce a set of domain peaks, each domain peak corresponding to a straight line of a set of straight lines; and determining which of the straight lines belong to the set of boundaries based on a set of rules is provided by the conventional description of the Hough transform taught by Ishikawa in at least c. 4, line 64 – c. 5, line 67, where peaks are provided by a

distribution of Hough transformed points (compare with Applicant's Fig. 2, for example), and which is clearly governed by a set of rules to determine which lines are boundaries.

For claim 14, see the rejection of at least claim 12.

For claim 39, see the rejection of at least claim 12.

For claim 40, see the rejection of at least claim 12.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 19-20, 22-23, and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishikawa et al., 6,157,737, as applied to claims above, and in view of de Queiroz et al., 5,892,854.

For claim 19, see the rejection of at least claim 27, and note that transitions are provided by at least the edges of regions of Ishikawa. A scanner lid is provided by the scanner cover taught by Ishikawa in at least the penultimate full paragraph in c. 2.

Determining a background color of a scanner lid is not explicitly provided by Ishikawa, but is conventional and well known and is provided by de Queiroz in at least the last full paragraph in c. 6. This determination can be used to assist in the determination of an edge map of Ishikawa, since de Queiroz also teaches identifying edges of objects in at

least the last full paragraph in c. 7 and the first full paragraph in c. 8. It would've been obvious to one having ordinary skill in the art at the time the invention was made to determine a background color of a scanner lid, since Ishikawa also has a scanner lid and segments objects, and because the background color determination makes sure that a proper object boundary is determined. Identifying a set of transitions between the background color and other colors that correspond to the image data is provided by de Queiroz where cited above by finding the transition boundaries between the background and objects, and is also provided by the edge object regions of Ishikawa. Analyzing the set of transitions to detect a set of image data characteristics is provided by Ishikawa where cited above. Estimating based on a set of one or more rules, a number of objects based on the set of image data characteristics is provided by Ishikawa where cited above and in at least c. 4, line 64 – c. 5, line 67, where specific “rules” are used in the determination of objects with analyzing the edge map to determine boundaries by determining image data characteristics.

For claim 20, see the rejection of at least claim 36.

For claim 22, see the rejection of at least claim 2.

For claim 23, see the rejection of at least claim 19.

For claim 26, see the rejection of at least claim 44.

9. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ishikawa et al., 6,157,737, and de Queiroz et al., 5,892,854, as applied to claims above, and in view of Arney et al., 6,298,172.

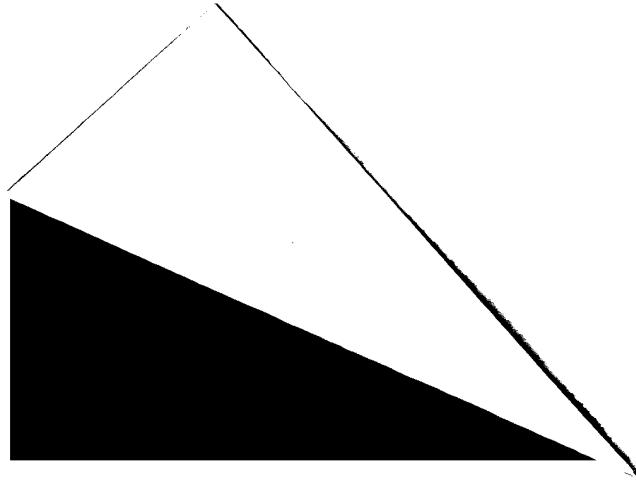
For claim 21, a method as recited in claim 19, wherein the image data is scanned image data is clearly provided by the scanner of Ishikawa – see the rejection of at least claim 19. Ishikawa is silent with respect to the scanned image being preview data, but it is conventional and well known that scanned image data can be preview image data as taught by Arney in at least the title and abstract. A preview feature, as taught by Arney, can be used with the scanner's image processor of Ishikawa. It would've been obvious to one having ordinary skill in the art at the time the invention was made to use a scanning preview feature with Ishikawa, as taught by Arney, so that the advantage of proper image placement can be done prior to the main scanning operations, and because the system of Arney operates in real time.

10. Claims 11 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishikawa et al., 6,157,737, and de Queiroz et al., 5,892,854, as applied to claims above, and in view of Katayama et al., 6,404,936.

For claim 11, see the rejection of at least claims 19 and 27. A method as recited in claim 7, wherein the edge map comprises an array of elements, each element representing a respective pixel of the image data is provided by Ishikawa where cited where the edge map is a map of the images pixels by reciting that the boundary are "picture elements" (i.e. "pixels") "disposed along an apparent border

line"; and wherein the generating further comprises: estimating a background color of a scanner lid is provided by de Queiroz where cited above. For each pixel of at least one subset of the image data: identifying an absolute difference between a value of a current pixel and the background color; and if the absolute difference is greater than a predetermined threshold, indicating that a corresponding array element represents a pixel of the at least one subset of image data that belongs to an edge is not explicitly provided by Ishikawa or de Queiroz, but both provide for edge detection. Katayama is in the same environment of segmenting/extracting a desired object region within an image as noted in at least the abstract, and further teach the conventionality of edge detection using a absolute difference of pixels in at least the last full paragraph in c. 6. Either or both Ishikawa or de Queiroz can use the conventional and well known absolute difference to determine an edge between a background and object in their determinations of edges within the image for object recognition. It would've been obvious to one having ordinary skill in the art at the time the invention was made to detect edges using an absolute difference of pixels with a background, since this is an effective and conventional way to determine edge intensities for region extraction, and because the threshold of Katayama can be changed.

For claim 38, see the rejection of at least claim 11.



Allowable Subject Matter

11. Claims 13, 15-17, 24-25, 29-33, and 41-43 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Contact Information

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Timothy M Johnson whose telephone number is 703-306-3096. The examiner can normally be reached on Monday – Friday from 5:30 to 2:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh M. Mehta, can be reached on Monday – Friday from 9:30 to 5:00. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Timothy M. Johnson
Patent Examiner
Art Unit 2625
March 03, 2004

Timothy M. Johnson
TIMOTHY M. JOHNSON
PRIMARY EXAMINER